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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/807,187      | 08/21/2001  | Hideki Iwami         | 6640/62669          | 4182             |

7590 01/28/2005

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1185 Avenue of the Americas  
New York, NY 10036

EXAMINER

JONES, PRENELL P

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2667

DATE MAILED: 01/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/807,187

Applicant(s)

IWAMI, HIDEKI

Examiner

Prenell P Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 8/21/2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-7 is/are allowed.
- 6) ☐ Claim(s) 8 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaksson et al in view of Miyashita et al.

Regarding claims 8 and 9, Isaksson discloses (Abstract, Figs. 4, 12, 13, 15, col. 3, line 35 thru col. 4, line 46, col. 12, line 13-48, col. 13, line 54 thru col. 14, line 9 thru col. 16, line 65) a multi-carrier transmission system, wherein the architecture includes multi-carrier transmission system that utilize orthogonal carriers and complex, receiver sampling clock is synchronized with respect to pilot carrier, whereby pilot carrier is a complex estimate that includes a real part and an imaginary part, peak levels associated with the transmitter and receiver, prefixes/first information and samples/second information, synchronization method includes correlating samples of received signals separated by guard intervals that will cause a peak in correlation estimates, correlator used for detecting pattern of frames that gives the timing signal for synchronization interval, symbol detection, correlator and peak time estimator use a clock generated by VCXO. Isaksson is silent on a correlator for correlating a received symbol stream and first information of one of a real number portion and an imaginary number portion stored in memory. In analogous art, Miyashita discloses (Abstract, Figs. 6B & 8) multi-carrier modulation using guard intervals as associated in a OFDM environment which includes OFDM

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modulation/demodulation apparatus, (page 4, col. 6, line 16-57) frame includes front edge (preamble) of symbol and duration of symbol (data), and a timing signal regenerator that represents a correlator coupled to memory receiving real and imaginary parts of complex pilot carrier symbol stream of data. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to be motivated to implement storing information with respect to real and imaginary parts of pilot carrier as associated with correlation peaks and estimates in synchronization when estimating timing as taught by Miyashita with the teachings of Isaksson for the purpose of further managing data information as associated with frame synchronization, which included comparing data values/information for estimation calculations.

***Allowable Subject Matter***

1. Claims 1-7 are allowed over prior art.

2. The following is a statement of reasons for the indication of allowable subject matter:

Although the cited art discloses multi-carrier transmission and modulation in an OFDM and DMT environment, a multi-carrier transmission system, wherein the architecture includes multi-carrier transmission system that utilize orthogonal carriers and complex, receiver sampling clock is synchronized with respect to pilot carrier, whereby pilot carrier is a complex estimate that includes a real part and an imaginary part, peak levels associated with the transmitter and receiver, synchronization method includes correlating samples of received signals separated by guard intervals that will cause a peak in correlation estimates, correlator used for detecting pattern of frames that gives the timing signal for synchronization interval, correlator and peak time estimator use a clock generated by VCXO, multi-carrier modulation using guard intervals as associated in a OFDM environment which includes OFDM modulation/demodulation apparatus, and a timing signal regenerator that represents a correlator coupled to memory

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receiving real and imaginary parts of complex pilot carrier symbol stream of data they fail to teach or suggest synchronizing a transmission signal is disposed at a predetermined interval in second information, and an apparatus that includes symbol generating means for expanding transmission symbol stream generated by a first modulation means on a frequency axis to generate a symmetrical symbol stream, and a second modulation technique for converting symmetrical transmission symbol stream.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prenell P. Jones whose telephone number is 703-305-0630. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3180.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Prenell P. Jones

January 24, 2005

A handwritten signature in black ink, appearing to read "Prenell Jones", written over the typed name and date.